REMARKS/ARGUMENTS

35 U.S.C. 102 and 103 based rejections and claim amendments

In response to the amendment dated 5/11/2007, the Examiner has rejected claims 1, 4, 11, 14, 21, 24, 31-33, 35-37, 39-40, and 41 under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran (US 6,266,335) in view of Kandasamy (US 5,513,314). Claims 3, 13, and 23 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran in view of Allen (US 7,003,693). Claims 34, 38, and 43 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran in view of Kandasamy and further in view of Kodama (2004/0034671).

Applicants have amended at least the independent claims 1, 11, 21. Applicants are not conceding in this application that the original and any earlier claims presented during prosecution are not patentable over the art cited by the Examiner, as the present claim amendments are only for facilitating expeditious prosecution of the Application. Applicants respectfully reserve the right to pursue any of the original and any earlier claims presented during prosecution in one or more continuations and/or divisional patent applications.

Amended Independent claims 1, 11, 21

Amended independent claims 1, 11, 21 require

receiving an I/O command at a switch from a host;

if the I/O command is a write I/O, then writing data via the switch to a primary storage subsystem and a secondary storage subsystem, wherein the switch couples the host to the primary storage subsystem and the secondary storage subsystem, and wherein the data written to the primary storage subsystem and the data written to the secondary storage subsystem are the same;

receiving an indication of a failure of the primary storage subsystem at the switch; and

subsequently, directing a command from the host received at the switch to the secondary storage subsystem for completion by changing a source volume and a target volume in the command to correspond to volumes in the secondary storage subsystem, wherein the source volume and the target volume are for I/O operations, and wherein the changing is performed by a

switching application in the switch, wherein a hardware unit is coupled to the primary storage subsystem, wherein the hardware unit traps alerts related to I/O failures and notifies the switch to perform the changing, and wherein in response to the hardware unit receiving a notification that the primary storage subsystem is fixed creating a copy of secondary storage subsystem data to guard against any subsequent failure during resynchronization of the primary and secondary storage systems.

The newly added claim requirements that a hardware unit is coupled to the primary storage subsystem, wherein the hardware unit traps alerts related to I/O failures and notifies the switch to perform the changing, and wherein in response to the hardware unit receiving a notification that the primary storage subsystem is fixed creating a copy of secondary storage subsystem data to guard against any subsequent failure during resynchronization of the primary and secondary storage systems, may be supported by at least paragraphs 31-33 of the Application, and at least FIG. 5 (reference numerals 512, 514), and FIG. 4 of the Application.

The Examiner cited Bhaskaran discusses switching between primary and secondary storage subsystems and the Examiner cited Kandasamy discusses mirroring data between primary and secondary servers.

However, nowhere does the Examiner cited sections of the cited Bhaskaran and the cited Kandasamy teach, disclose or suggest the following newly added claim requirements:

(i) hardware unit is coupled to the primary storage subsystem, wherein the hardware unit traps alerts related to I/O failures and notifies the switch to perform the changing;

(ii) in response to the hardware unit receiving a notification that the primary storage subsystem is fixed creating a copy of secondary storage subsystem data to guard against any subsequent failure during resynchronization of the primary and secondary storage systems.

For the above reasons, independent claims 1, 11, 21 are patentable over the cited art.

Certain arguments that are based on previously provided arguments are provided below.

Nowhere does the cited Bhaskaran or the cited Kandasamy teach or suggest the claim requirements of a source volume and a target volume in a command received at the switch from a host. Applicants submit that col. 6, lines 51-53 of the cited Bhaskaran used in rejecting the claims earlier by the Examiner mentions that "FIG. 3B illustrates the format of link filed 320. Link field 320 has a Data Link source address field 380, a Data Link Layer destination address field 390 and type field 395". Applicants submit that the Data Link source address field 380 and

the Data Link Layer destination address field 390 of the cited Bhaskaran as referred to by the Examiner are MAC source address (Cited Bhaskaran: FIG. 3B, reference numeral 380) and MAC destination address (Cited Bhaskaran: FIG. 3B, reference numeral 390) respectively as can be seen in FIG. 3B of the cited Bhaskaran. Applicants submit that the term MAC as used in FIG. 3B of the cited Bhaskaran is an abbreviation for "Medium Access Control" and MAC source address and MAC destination address may comprise a unique address associated with a Network Interface Card. Applicants respectfully submit that source and targets volumes of the claim requirements are storage volumes and are different from the source address field 380 and the destination address field 390 of the cited Bhaskaran which appear to refer to unique addresses associated with Network Interface Card. Applicants also draw the attention of the Examiner to paragraph 28 of the Application filed by the Applicants to further support that the source and target volumes of the claim requirements are different from the source address field 390 and the destination address field 390 of the cited Bhaskaran. Therefore, while the cited Bhaskaran may discuss a system where a switch changes source and destination MAC addresses, the claims require changing, by the switching application in the switch, the source volume and a target volume in the command to correspond to volumes in the secondary storage subsystem, and these claim requirements are neither taught nor disclosed by the cited Bhaskaran (col. 6. lines 51-53; col. 8, lines 56-59) used in rejecting the claims. In particular, the cited Bhaskaran discusses switching source and destination MAC addresses whereas the claims require (i) a source volume and a target volume in a command received at the switch from a host; and (ii) changing, by the switching application in the switch, the source volume and a target volume in the command to correspond to volumes in the secondary storage subsystem; and these claim requirements are not taught or disclosed by the cited Bhaskaran or the cited Kandasamy, wherein the cited Kandasamy discusses mirroring of data between primary and secondary systems.

For the above reasons independent claims 1, 11, 21 are patentable over the cited art.

Dependent claims 3-4, 13-14, 23-24, 31-42.

Additionally, claims 3-4, 13-14, 23-24, 31-42 depend directly or indirectly on the pending independent claims 1, 11, 21. Applicants submit that these claims are patentable over the cited art because they depend from claims 1, 11, 21 which are patentable over the cited art for the reason discussed above, and because the combination of the limitations in the dependent

claims and the base and intervening claims from which claims 3-4, 13-14, 23-24, 31-42 depend provide further grounds of distinction over the cited art.

Dependent claims 31, 32, 33

Dependent claims 31, 32, 33 depend on independent claims 1, 11, 21 respectively and require that the switch be an I/O switch implemented in a fibre channel mechanism. The Examiner has mentioned in the office action that it is inherent that fibre channel is commonly used in networks. Applicants request the Examiner to cite a specific reference that teaches, discloses, or suggests the claim requirement that operations required by claims 1, 11, 21 are performed in an I/O switch implemented in a fibre channel mechanism.

Dependent claims, 3, 13, 23

Amended claims 3, 13, 23 depend on claims 31, 35, 39 respectively and further comprise:

receiving a second notification at the switch from a monitor application that traps an I/O alert corresponding to the failure, wherein the monitor application is coupled to the hardware unit coupled to the primary storage subsystem; and

holding an I/O request that resulted in the failure in a busy state at the monitor application.

Claims 3, 13, and 23 had been rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran in view of Kandasamy and further in view of Allen.

The cited Bhaskaran discusses switching of systems, the cited Kandasamy discusses mirroring between storage systems, and the cited Allen discusses duplexing of processing facilities. Col. 82, lines 19-29 of the cited Allen used in rejecting the claims discusses queuing and holding of requests. However, the claims have the additional requirements of holding an I/O request that resulted in the failure in a busy state at the monitor application and this requirement is not is not taught, disclosed or suggested by the cited Bhaskaran, the cited Kandasamy or the cited Allen.

Should the Examiner continue to reject the claims the Examiner is requested to indicate where the cited art teaches, discloses or suggests the claim requirements of:

(i) a monitor application that traps an I/O alert corresponding to the failure;

(ii) holding an I/O request that resulted in the failure in a busy state at the monitor application; and

(iii) a second notification.

For the above reasons claims 3, 13, 23 are patentable over the cited art.

Conclusion

For all the above reasons, Applicant submits that the pending claims are patentable over the art of record. Should any additional fees be required, please charge Deposit Account No. 09-0449.

The attorney/agent of record invites the Examiner to contact him at (310) 557-2292 if the Examiner believes such contact would advance the prosecution of the case.

Dated: October 29, 2007   By:__/Rabindranath Dutta/__

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